

REMARKS

Applicants have amended Claims 10-15 for the reasons discussed below. Applicants have also amended Claim 9 to limit the claims to compositions consisting essentially of spiroxamine, prothioconazole, and tebuconazole, meaning that no other active ingredients are present. This limitation is consistent with the overall focus of Applicants' specification. For example, the effective exclusion of other active ingredients is supported by the specification at page 5, lines 5-8, which teaches that such additional components can optionally be present and thus, conversely, need not be present.

Applicants have amended their specification to correct an inadvertent typographical error in the Colby formula as applied to combinations of three active compounds. That is, in the second term, the multiplied quantities should be added together and their sum then be subtracted from the first term. The equation is correctly represented in the original article by S.R. Colby. This correction has no substantive effect on Applicants' disclosure.

Objections

Claims 10-15 stand objected to as containing typographical errors. Applicants respectfully traverse.

The first objection relates to Applicants' use of the term "Claim" instead of "claim" within their dependent claims (the reference to Claim 11 in Claim 12 being an example). The Office Action provides no basis for its assertion that use of the capitalized word "Claim" is improper. Nevertheless, Applicants have made the requested change to expedite passage to allowance.

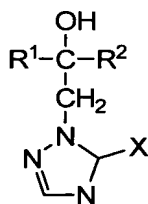
The second objection relates to Applicants' use of the phrase "according to Claim 9" in Claim 12. Although Applicants believe that the phrase need not be removed, the Office Action correctly points out that the meaning of formula (I) is unambiguous in view of the reference to the method of Claim 11, which itself refers to base Claim 9. Applicants therefore have amended Claim 12 as recommended in the Office Action and submit that the scope of Claim 12 remains unchanged.

Rejection under 35 U.S.C. 103

Claims 9-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,884,798 ("Baron et al") in view of US. Patent 5,789,430 ("Jautelat et al"). Applicants respectfully traverse.

Baron et al discloses fungicidal combinations containing **(A)** neem seed extracts used in combination with **(B)** any of four specific triazoles (one of which – (B)(1) – is tebuconazole and a second of which – (B)(4) – is prothioconazole (which the Office Action at page 4 incorrectly states is not disclosed)) or **(C)** either of two benzimidazole derivatives or **(D)** any of four specific strobilurins or **(E)** any of three miscellaneous active compounds (one of which – (E)(11) – is spiroxamine). E.g., column 1, lines 25-56. A key feature of Baron et al is the presence of Neem seed extracts, a substance that is not part of Applicants' specified three-component composition. Despite the disclosure of all three of the compounds that make up their invention, Applicants submit that this reference would not lead those skilled in the art to compositions that not only contain only the three specific active compounds required by Applicants but also exclude other active compounds such as neem seed extracts.

Applicants also submit that Jautelat et al would not lead those skilled in the art from Baron et al to their claimed invention. Jautelat et al discloses microbicidal triazolyl derivatives of the formula



(as well as their acid addition salts or metal salt complexes) in which **R**¹ and **R**² independently represent optionally substituted alkyl, alkenyl, cycloalkyl, aralkyl, aralkenyl, aroxyalkyl, aryl, or heteroaryl; **X** represents -SH, -SR³, -SO-R³, -SO₂-R³, or -SO₃H; and **R**³ represents alkyl optionally substituted with F and/or Cl, alkenyl optionally substituted with F and/or Cl, optionally substituted aralkyl, or optionally substituted aryl. E.g., column 1, lines 12-36. Among the compounds disclosed by Baron et al is prothioconazole. E.g., formula in Example 1 at column 35. Since Baron et al already discloses prothioconazole, Jautelat et al adds nothing new that would suggest Applicants' claimed invention. That is, Jautelat et al adds nothing that would lead those skilled in the art from Baron et al to the Applicants' narrowly defined three-component compositions.

Applicants' experimental data are also consistent with the patentability of their claimed invention. Although Applicants believe, for the reasons discussed above,

that their experimental results are not necessary to overcome the rejection, these results provide further relevant support for Applicants' position.

First, as shown in Table 3, Applicants found a fungicidal efficacy against *Fusarium nivale* of 100%, whereas one would have expected a significantly lower efficacy of only 54% as calculated using the three-component Colby formula.


Second, the data in Tables 1 and 2, although not directly amenable to use of the Colby formula, also show unexpectedly enhanced results. In Colby experiments, the same amount of compound is used when tested alone and when tested in a mixture. However, unlike Example 3 – where Table 3 shows that the application rates of each component tested separately were identical to the individual rates used in the tested combination – the experiments described in Examples 1 and 2 were conducted at rates such that the total amount of active ingredients in each mixture was the same as the individual rates. (For example, in Example 1, each component was individually tested at 125 g/ha, whereas the tested combination was applied in such a way that the total amount of all active ingredients was 125 g/ha.) Therefore, one can approximate the expected results by assuming a linear dose response curve over a modest rate range for each active compound. In Example 1 (against *Erysiphe graminis*), spiroxamine in the mixture was applied at an application rate of 55 g/ha instead of 125 g/ha when tested alone (i.e., at 0.44 times the rate when tested alone). The contribution of spiroxamine to the efficacy of the mixture, based on an assumed linear response, is thus 0.44 times the reported value of 33%, or 14.5%. Prothioconazole and tebuconazole in the mixture were each applied at a rate of 35 g/ha instead of 125 g/ha when tested individually (i.e., at 0.28 times the rate when tested alone), meaning that the contribution of prothioconazole to the mixture would be 0.28 times the reported value of 78%, or 21.8%, and the contribution of tebuconazole to the mixture would be 0.28 times the reported value of 78%, or also 21.8%. The combined efficacy of all three components against *Erysiphe graminis* would thus be about 58.1%, a value much lower than Applicants' observed value of 100% (i.e., total control). [Calculation of the combined efficacy using the three-component Colby formula gives an even lower calculated efficacy of 47.7% (i.e., $58.1\% - 11.1\% + 0.7\%$).] In Example 2 (against *Leptosphaeria nodorum*), spiroxamine in the mixture was applied at an application rate of 340 g/ha instead of 500 g/ha when tested alone (i.e., at 0.68 times the rate when tested alone). The contribution of spiroxamine to the efficacy of the mixture, based on an assumed

linear response, is thus 0.68 times the reported value of 0%, or 0% (i.e., a total absence of effect). Prothioconazole and tebuconazole in the mixture were each applied at a rate of 80 g/ha instead of 500 g/ha when tested individually (i.e., at 0.16 times the rate when tested alone), meaning that the contribution of prothioconazole to the mixture would be 0.16 times the reported value of 20%, or 3.2%, and the contribution of tebuconazole to the mixture would be 0.16 times the reported value of 40%, or 6.4%. The combined efficacy of all three components against *Leptosphaeria nodorum* would thus be about 9.6%, a value much lower than Applicants' observed value of 60%. [Calculation of the combined efficacy using the three-component Colby formula gives a lower calculated efficacy of 9.4% (i.e., $9.6\% - 0.2\% + 0\%$).] Although the calculations based on Tables 1 and 2 are not as rigorous as that for Table 3, the differences in the observed and calculated values are so great that they are fully consistent with the patentability of Applicants' claimed invention.

Applicants therefore respectfully submit that their claimed invention is not rendered obvious by Baron et al in view of Jautelat et al.

In view of the preceding amendments and remarks, allowance of the claims is respectfully requested.

Respectfully submitted,

By 
Richard E. L. Henderson
Attorney for Applicants
Reg. No. 31,619

Bayer CropScience LP
2 T.W. Alexander Drive
Research Triangle Park, NC 27709
Ph.: (919) 549-2183
Fax: (919) 549-3994

Q/Patents/Prosecution Documents/CS8795/8795 Amendment